Robert W. Day

Cizik Professor of Manufacturing and Technology Management
Operations and Information Management (hired 2004, tenured 2011, promoted 2020)
School of Business
University of Connecticut
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Last Update: 10-March-2025

Education:

August 2004	*Doctorate of Philosophy*, University of Maryland, College Park, Applied Mathematics and Scientific Computation, concentration in Operations Research, R.H. Smith School of Business, Major advisor: S. Raghavan
May 1999	*Bachelor of Arts*, Vanderbilt University, Nashville, TN Mathematics and Economics, Cum Laude

Highlighted Awards and Honors:

President, INFORMS Section on Auctions and Market Design, 2018-2019. Founding President.

Best Paper Award, 2017, awarded to the most outstanding research paper in the School of Business, University of Connecticut, for Schneider and Day 2016.

Service Award, 2016, awarded in recognition of outstanding service to the School of Business, University of Connecticut.

Innovation in Teaching Award, 2013, awarded for innovative course development in School of Business, University of Connecticut, for OPIM 3801: Principles of Project Management.

INFORMS Computing Society Prize, 2008, awarded annually for the best English language paper or group of related papers in the Operations Research/Computer Science interface, in recognition of the scholarly and applied contributions of Day and Raghavan 2007.

Best Paper Award, 2007, awarded to the most outstanding research paper in the School of Business, University of Connecticut, for Day and Raghavan 2007.

Dantzig Dissertation Award, 2005, awarded by INFORMS for the best dissertation in Operations Research and the Management Sciences that is innovative and relevant to practice.

Research:

Refereed Journal Papers:

"Walrasian Pricing for Combinatorial Markets with Compact-Bidding Languages: An Application to Truckload Transportation," (w/ M. Emadikhiav) *Information Systems Research*, January 2025.

"A decision support framework for integrated lane identification and long-term backhaul collaboration using spatial analytics and optimization," (w/ M. Emadikhiav, S. Bhattacharjee, and D. Bergman) *Decision Support Systems*, **180**, May 2024, Article 114186.

"Balancing stability and efficiency in team formation," (w/ H. Atef Yekta and D. Bergman) *Naval Research Logistics*, **70**(1), December 2022, pp. 72–88.

"Maximizing student opportunities for in-person classes under pandemic capacity reductions," (w/ C. Cardonha and D. Bergman) *Decision Support Systems*, **154**, March 2022, Article 113697.

"Consistent Routing with Simultaneous Pickups and Deliveries," (w/ D. Bergman and M. Emadikhiav) *Production and Operations Mgmt*, **29**(8), August 2020, pp. 1937-1955.

"Improving the Performance of Multiple Online Auction via Seek-and-Protect Agents," (w/ R. Bapna and S. Rice) *Production and Operations Mgmt*, **29**(8), August 2020, pp. 1878-1893.

"Optimization-based Mechanisms for the Course Allocation Problem," (w/ H. Atef Yekta) *INFORMS Journal on Computing*, **32**(3), Fall 2020, pp. 641-660.

"A Carbon Emissions Game," (w/ I. Frommer), *INFORMS Transactions on Education*, **18**(1), July 2017, pp. 56-70.

"Target-Adjusted Utility Functions and Expected-Utility Paradoxes," (w/ M. Schneider), *Management Science*, **64**(1), December 2016, pp. 271-287.

"Risk Aversion and Loss Aversion in Core-Selecting Auctions," (w/ M. Schneider and R. Garfinkel), *Decision Support Systems* **79**, November 2015, pp. 161-170.

"Compact bid languages and core-pricing in large multi-item auctions" (w/ A. Goetzendorff, M. Bichler, and P. Shabalin), *Management Science*, **61**(7), July 2015, pp. 1684–1703.

"Integrated Block Sharing: A Win–Win Strategy for Hospitals and Surgeons," (w/ R. Garfinkel and S. Thompson), *Manufacturing and Service Operations Mgmt*, **14**(4), Fall 2012, pp. 567-583.

"Quadratic Core-Selecting Payment Rules for Combinatorial Auctions," (w/ P. Cramton), *Operations Research*, **60**(3), May 2012, pp. 588-603.

"A Clock-and-Offer Auction Market for Grid Resources with Uncertain CPU Requirements," (w/ R. Bapna, S. Das, R. Garfinkel, and J. Stallaert), *INFORMS Journal on Computing*, **24**(3), Fall 2011, pp. 630-647.

"Improving Patient Flow in a Hospital Through Dynamic Allocation of Cardiac Diagnostic Testing Time Slots," (w/ M. Dean, R. Garfinkel and S. Thompson), *Decision Support Systems*, **49**(4), November 2010, pp. 463-473.

"Matrix Bidding in Combinatorial Auctions," (w/ S. Raghavan), *Operations Research* **57**(4), July 2009, pp. 916-933.

"Core-Selecting Package Auctions," (w/ P. Milgrom), *International Journal of Game Theory* **36**(3), March 2008, pp. 393-407.

"A Combinatorial Procurement Auction Featuring Bundle Price Revelation without Free Riding," (w/ S. Raghavan) *Decision Support Systems* **44**(3), February 2008, pp. 621-640.

"Fair Payments for Efficient Allocations in Public Sector Combinatorial Auctions," (w/ S. Raghavan) *Management Science* **53**(9), September 2007, pp. 1389-1406.

"The Landscape of Electronic Market Design," (w/ G. Anandalingam and S. Raghavan) *Management Science* **51**(3), March 2005, pp. 316-327.

Working paper:

"Pricing Valid Cuts for Price-Match Equilibria," (w/ B. Lubin) available on arXiv.

Current Research Projects:

"Market-making for *Daily Fantasy Pool*," (w/ D. Bergman and J. Sylvestre-Decary)

"Information Design for Public Transportation," (w/ N. Lownes and D. Rhoads)

"The Division of Surplus in Combinatorial Exchanges," available on SSRN.

Book Chapters:

"Combinatorial Auctions," Section 16.7, pp. 1222-1231 in *The Handbook of Discrete and Combinatorial Mathematics*, D. Shier (Ed.) (2017). CRC Press. Note: Original book chapter commissioned specifically for this work.

"Quadratic core-selecting payment rules for combinatorial auctions," Chapter 10 in *The Handbook of Spectrum Auction Design*, Bichler, M. and J. Goeree (Eds.) (2017). Springer. Note: reprint of Day and Cramton 2012.

"Core-Selecting Auctions," Chapter 11 in *The Handbook of Spectrum Auction Design*, Bichler, M. and J. Goeree (Eds.) (2017). Springer. Note: major revision of Day and Milgrom 2008.

"Optimal Incentives in Core-Selecting Auctions," Chapter 12 in *The Handbook of Market Design*, Vulkan, N., Roth, A. E., & Neeman, Z. (Eds.) (2013). Oxford University Press. Note: major revision of Day and Milgrom 2008.

"Improving the Flow of Patients through Healthcare Organizations," Chapter 7 in *Handbook of Healthcare Operations Management*, B. Denton (Ed.) (2013). Springer. Note: major revision of material presented as part of Day, Garfinkel, Thompson 2012.

Conference Papers:

"Assignment Preferences and Combinatorial Auctions," (w/ S. Raghavan) *12th INFORMS Computing Society Conference*, refereed conference paper, 2011.

"A Robust Combinatorial Auction Mechanism against Shill Bidding," Matsuo, T., T. Ito, R. Day, and T. Shintani, *Automated Agents and Multi-Agent Systems*, refereed conference paper, 2006.

"Vehicle Networks: Achieving Regular Formation," (w/ Glavaski et. al), *Proceedings of the American Control Conference*, Denver, Colorado June 4-6, 2003.

Teaching:

Teaching Interests: Quantitative Methods for Graduate and Undergraduate students, Mathematical Programming and its Applications, Operations Research, Operations Management, Project Management, Statistical Quality Control, Game Theory and Auctions, development of Computer Science, Engineering, and Applied Mathematics curriculum for interdisciplinary/business students.

Teaching Experience:

Full/Associate/Assistant Professor, Operations and Information Management, U. of Connecticut:

2024-	MEM 1151: Introduction to Management and Engineering for Manufacturing, emphasis on quantitative skills and foundational skills across Business and Engineering.
2004-2023	OPIM 3104: Operations Management for undergraduate business students, emphasis on quantitative skills and proficiency in software applications.
2017	MEM 4971W: Senior Design Project 1, team-taught with Engineering faculty, emphasis on optimization techniques for manufacturing, including scheduling and layout strategy.
2017	OPIM 6201: Research Methods for Operations and Information Management, team-taught with M. Nunez and J. Stallaert, PhD Seminar in Operations Research fundamentals.
2012-2017	OPIM 3801: Principles of Project Management, for undergraduate students, emphasis on quantitative skills and proficiency in Microsoft Excel and Project.

2013   OPIM 5110: Operations Management for the full-time MBA program, emphasis on quantitative analysis and business decision making.

2009-   BADM 5894: Project Management Module for the full-time MBA program, emphasis on
2010   planning, closing, scope management and time management.

2009   OPIM 6202: PhD Seminar in Operations Research and Auction Applications, Spring 2009.

2008   OPIM 252: Statistical Quality Control for the Management and Engineering for Manufacturing (MEM) program.

Teaching Assistant, University of Maryland:

2003   *Graduate Assistant*, guest lecturer, grader for a doctoral course on Integer Programming.

2001   *Instructor*, summer course in Linear Algebra.

2001   *Instructor*, Probability and Geometry for undergraduate Education majors.

1999-   *Teaching Assistant*, Linear Algebra I, Calculus I and II, leader of discussion sections with
2002   regular office hours, writer and grader of quizzes, grader of exams.

1999   *Participant*, Graduate Teaching Seminar, classroom auditing and interactive evaluation, teaching workshop.

Highlighted Service Activities:

2017-   *Associate Dean for Undergraduate Programs*, overseeing Business Connections Learning
2022   Communities, Office of Diversity Initiatives, Office of Undergraduate Advising, and Undergraduate Career Development Office.

2017-   *Delta Gen Ed Committees*, multi-year review and redesign of the University of Connecticut
2022   general education curriculum. Senate approved Core Curriculum Guidelines 2-28-2022.

2011-   *INFORMS Annual Meeting, Cluster Chair, Auctions and Market Design (formerly Auctions*
2019   *Cluster)*, 2011 co-chair with M. Bichler, other years individually. 40-60 speakers annually.

2015-   *Member, Werth Institute for Entrepreneurship and Innovation (formerly steering committee*
2019-   *of the Entrepreneurship and Innovation Consortium)*, outreach and programmatic offerings related to interdisciplinary work in entrepreneurship and innovation. Founded the Experience Innovation Expo annual university event.

2018-   *General Education in Environmental Literacy Task Force*, learning objective and
2019   educational program goal setting for new general education requirement.

2013- *Co-Director, Management and Engineering for Manufacturing (MEM)*, working with
2018   School of Engineering Co-Director, administered the MEM undergraduate major program,
       growing student major enrollments from under 50 to over 140 and establishing a revenue-
       generating full-year sponsored senior-design program.

2014- *University of Connecticut Research Advisory Council (RAC) representative*, advisory to the
2017   Office of the Vice President for Research, administering the Research Excellence Program;
       co-chaired (with Adrienne Macki of the School of Fine Arts) the 2015 Research Excellence
       Program Group on "Artists, Creative Scholarship, Humanities and Engagement,"
       compiling reviews and making funding recommendations.

Consulting Projects in Auction Design:

Working with Market Design, Inc., I issued the following reports to Ofcom, the independent
regulator and competition authority for UK communications industries, commenting on spectrum
auction proposals and recommending improved designs:

> "A Review of the United Kingdom's 4G Spectrum Auction," Peter Cramton, Robert Day,
> and Pacharasut Sujarittanonta, March 2013.

> "Auction Design for the 800 MHz Spectrum and Other Bands," Peter Cramton and Robert
> W. Day, May 2010.

> "Further Comments on Auction Design for the 800 MHz Spectrum and Other Bands,"
> Peter Cramton and Robert W. Day, May 2010.

Designed auction rules and developed combinatorial auction optimization software used for L-
band, 10-40GHz, and the 800MHz and 2.6GHz (4G) spectrum license auctions by Ofcom. Total
revenues exceeded £2.37 billion for the 4G auction.

Designed and developed combinatorial auction optimization software used in the 2009 Federal
Aviation Administration (FAA) bidder seminar, preliminary activities for an auction of take-
off/landing slots to control airport congestion.

Designed and developed combinatorial auction optimization software for potential use in the
Federal Communications Commission (FCC) AWS3 auction.

Consulting Projects in Healthcare Management:

Designed and implemented a block-scheduling algorithm for Henrico's Doctors' Hospital, a
subsidiary of Hospital Corporation of America (HCA), allocating recurring access patterns to
surgeons involved in non-urgent surgical cases, and resulting in revenue increases of $1.2 million
in the first year.

Consultant to Comprisma, designing risk-pooling markets in the health insurance industry.

Other Honors, Awards, and Grants:

Principal, IN4SPIRE, 2019-2020, $200k CTNext grant to develop Industry 4.0 educational partnerships, training students, entrepreneurs, and industry participants to apply advanced digital technologies to manufacturing and to develop proofs of concept projects. Partnership with UConn Engineering, U. of New Haven, U. of Hartford, Trinity College, CCSU.

Ackerman Scholarship, 2015-2017, 2008-2010, recognizes significant and continuing all around academic productivity among the faculty of the School of Business, University of Connecticut.

MBA Teacher of the Year (OPIM), 2013-2014, award voted on by full-time MBA students.

Best Paper Award, Second Place, 2012, awarded to the most outstanding research paper in the School of Business, University of Connecticut, for Day, Garfinkel, and Thompson 2012.

Best Paper Award, Honorable Mention, 2012, awarded to the most outstanding research paper in the School of Business, University of Connecticut, for Day and Cramton 2012.

Finalist: EURO Excellence in Practice Award, 2009, awarded by EURO: the Association of European Operational Research Societies, recognizing outstanding accomplishments in the practice of Operational Research.

INFORMS Young Researcher Roundtable Selected Participant, April 30-May 2, 2006.

Vertical Integration of Research and Education in the Mathematical Sciences (VIGRE) Award. Spring 2004. National Science Foundation Dissertation Grant, University of Maryland.

Research Assistant, 2002-2003, National Science Foundation Grant: "Rapid Response Electronic Markets for Time-Sensitive Goods." Presentations given: "Matrix Bidding in Combinatorial Auctions," and "Time-Sensitive Goods and the Substitutes Property."

INFORMS Doctoral Colloquium Selected Participant, October 17-18, 2003.

Spotlight on Graduate Research Award, February 20, 2003, Department of Mathematics, University of Maryland.

Mathematical Modeling in Industry - A Workshop for Graduate Students, Selected Participant, May 26- June 3, 2002, The Institute for Mathematics and its Application, University of Minnesota.

Excellence in Teaching Award for Graduate Assistants Nominee, December 19, 2001, Department of Mathematics, University of Maryland, College Park. Nominated by Students.

Conferences and Presentations:

INFORMS Workshop on Mathematical Optimization in Market Design, 2018, 2019. Workshop organizer and speaker. Co-located with the 19th ACM Conference on Economics and Computation.

Cornell University, June 2018, co-chaired invited program; Phoenix, AZ, June 2019, co-chaired referee process for paper selection.

OR 2017, International Conference on Operations Research: Decision Analytics for the Digital Economy, September 6-8, 2017, Berlin, Germany. Invited Speaker.

OR 2015, International Conference on Operations Research: Optimal Decisions and Big Data, September 1-4, 2015, Vienna, Austria. Invited Speaker.

Duke University, CS/ECON Seminar Series, December 12, 2014. Campus visit and research presentation.

Yale University, Microeconomic Theory Seminar, March 27, 2013. Campus visit and research presentation.

Workshop on Information Systems Economics (WISE), December 16, 2012. Speaker and poster presentation.

Rutgers University, Management Science & Information Systems Department, November 12, 2012. Campus visit and research presentation.

Technische Universität München (TUM or Technical University of Munich), Department of Informatics. September 11, 2012. Visiting researcher and research presentation given.

INFORMS Healthcare, June 20-22, 2011. Invited Speaker.

Workshop on Information Systems Economics (WISE), December 11-12, 2010. Speaker and poster presentation.

EURO XXIV 2009, Conference Bonn Germany, July 5-8, 2009. Invited Speaker.

Michael Rothkopf Memorial Conference, Penn State University, June 2, 2009. Invited Speaker.

Los Alamos National Laboratories, Center for Nonlinear Studies. July 1, 2008. Center visit and research presentation.

Ninth INFORMS Telecommunications Conference, University of Maryland, March 27-29, 2008. Invited Speaker, Session Chair.

The 18th International Conference on Game Theory, Stony Brook University, July 9-13, 2007. Research presented by co-author, Paul Milgrom.

Euro XXI 2006, Congress in Iceland, July 2-5, 2006. Invited Speaker.

North American Summer Meeting of the Econometric Society, June 22-25, 2006. Invited Speaker.

INFORMS Practice Conference, April 30-May 2, 2006. Invited Participant.

Harvard University, Econ/CS Group, March 11, 2005. Campus visit and research presentation.

NEXTOR/FAA, Mock Auction, Congestion Management Project/Strategic Simulation, February 24-25, 2005. Team Facilitator.

Computing and Markets, Schloss Dagstuhl International Conference and Research Center for Computer Science, January 3-7, 2005. Invited Speaker.

DIMACS Workshop for Computational Issues in Auction Design, October 7-8, 2004. Invited Speaker.

NEXTOR Workshop: *Government, the Airline Industry and the Flying Public: a New Way of Doing Business,* June 21-23, 2004. Research presented by co-author, S. Raghavan.

CORS/INFORMS Joint International Meeting, May 16-19, 2004. Invited Speaker.

INFORMS Annual Meeting, Invited Speaker: 2024, 2023, 2022, 2019, 2018, 2017, 2016, 2015, 2014, 2013, 2011, 2010, 2009, 2008, 2007, 2006, 2005, 2004, 2003, 2002; Session Chair 2024, 2019, 2018, 2017, 2016, 2015, 2014, 2013, 2012, 2011, 2010, 2009, 2008, 2005.

Editorial and Review Service:

Associate Editor, *Management Science,* department: Market Design, Platform, and Demand Analytics. 2023-present.

Associate Editor, *Naval Research Logistics*, department: Algorithms, Computation, and Economics. 2023-present.

Guest Co-Editor, Special Issue on Market Design and Analytics, *Information Systems Research*, 2018-2022. (w/ R. Bapna, M. Bichler, and W, Ketter)

National Science Foundation Proposal Review Panel, Manufacturing and Service Enterprise Systems, 2015.

National Science Foundation Proposal Review Panel, Manufacturing and Service Enterprise Systems, 2006.

Assistant to the Guest Editors for the Special Issue on Electronic Markets, *Management Science* **51**(3), March 2005.

Reviewer for:
ACM EC conference, American Economic Review, Computers and Operations Research, Decision Analysis, Decision Sciences Journal, Decision Support Systems, Encyclopedia of Operations Research and Management Science, European Journal of Operations Research, Games and Economic Behavior, Information Systems Research, INFORMS Journal on Computing, INFORMS Telecom Conference, Interfaces, International Journal of Game Theory, International Journal of Production Economics, Journal of Artificial Intelligence Research, Journal of Economic

Behavior & Organization, Journal of Economic Theory, Management Science, Manufacturing and Service Operations Management, MSOM Conference, Operations Research, Networks, Production and Operations Management, Theoretical Economics, Transportation Science.

Other Service:

(UConn OPIM department) Faculty recruiting, 2005-2007, 2016, 2018, 2019. PhD first and second year program development, 2012-2013. PhD Program Website Redesign, 2008-2009. PhD committee, 2007-2009. Certificate in MIS program committee, 2007-2008. Departmental Seminar coordinator, 2007-2008. PhD recruiting, 2005-2008.

(School of Business) CIBER Faculty Advisory Committee, 2014-2018, Commencement Committee, 2009-2010, 2010-2011, 2012-2013, 2015-2016. MBA ACT Program committee, 2009-2010, 2012-2013, Full-time MBA Task Force, 2013. Masters Programming Committee 2011-2012.

(University of Connecticut) University Senate 2019-2026, Senate Executive Committee 2023-2026, Common Curriculum Faculty Navigator 2023-2025, General Education Oversight Committee 2019-2022, Undergraduate Program Review Committee 2017-2022, Degree in Three Committee, 2018-2019, Double Major Committee, 2019.